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ORIGINAL ARTICLES.

SOME OBSERVATIONS UPON SYPHILITIC MANIFESTATIONS IN THE UVEAL TRACT—THE IRIS, CILIARY BODY AND CHOROID.

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NO constitutional disease manifests itself so frequently by producing eye symptoms as does syphilis.

During the past year seventy cases of this disease exhibiting eye symptoms have been treated by me in my private practice, and of these seventy cases, the uveal tract (iris, ciliary body and choroid) was involved twenty-nine times, or in 41.4 per cent. of the total number.

In twenty-one of these twenty-nine cases the diseased process was confined to the iris and ciliary body, and in the choroid was primarily involved. From these figures it is seen that among eye affections caused by syphilis, iritis plays an important rôle.

Von Schröder[1] remarks that the right eye was involved

[1] Beitrāg zur Kenntniss der Iritis Syphilitica, Dorpater Dissertation, Petersburg, 1881.

more frequently than the left in the proportion of 108 to 84 among 192 of his cases of syphilitic iritis. Schmidt-Rimpler[2] says that among statistics collected from thirty-four of his cases of syphilitic iritis, one eye only was involved eighteen times, and that of these eighteen the right eye was affected thirteen times. In my twenty-one cases of syphilitic iritis the right eye was involved five times, the left fourteen times, and both eyes in two cases; consequently, I do not agree with them that the right iris is more susceptible to the syphilitic poison than the left.

Hypopyon existed in two of my cases—in one of them the primary syphilitic infection had occurred eight years previously, and in the other five years. In both of them the inflammation was acute, and gummata existed in the iris of each eye, in one near the pupillary margin, in the other near the ciliary margin. Schmidt-Rimpler says that hypopyon is an exceedingly rare condition, and that among forty-seven cases of syphilitic iritis he had seen it only twice.

Syphilitic iritis may be plastic, serous, papular, or gummatous in character.

Bull[3] states that iritis in a great majority of cases is an early lesion of syphilis, though it may be met with as a late manifestation; that, as a rule, only one eye is attacked at first, but the other soon becomes affected; that the iritis may be of three varieties—plastic, serous, or gummatous; that the first two varieties do not differ in their symptoms from iritis due to other causes, and that the sole variety of iritis absolutely indicative of syphilis is the "iritis gummosa," and to this variety alone should the term syphilitic iritis be applied.

Fuchs[4] says: "Syphilitic iritis generally belongs to the secondary stags of syphilis. It makes its appearance soon after the first eruptions upon the skin (macular or papular), for which reason we may compare the nodules in the iris to papules or to condylomata and may designate the iritis as

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[2] Beiträge zur Kenntniss der Iritis Syphilitica, Berliner klin. Wochenchr., No. 23, 1872.

[3] Medical News, May 20, 1899.

[4] Lehrbuch der Augenheilkunde, Fifth Edition, 1895, p. 328.

iritis papulosa. Generally the iritis appears during the first year after infection has taken place. More rarely the iritis breaks out during the later stages of syphilis, and is then not associated with the formation of nodules. In exceptional cases, however, nodules do show themselves in this late form also, and they must then be regarded as gummata (iritis gummosa). These are observed both in the iris and ciliary body."

My experience accords entirely with that of Schmidt-Rimpler[5], that in iritis with the formation of nodules, as a rule, true gummata are not present, but that these can appear during the later stages of syphilis, and that the tendency with the nodules existing in the iris during the early stages of syphilis is not destructive in character; also that these nodules are analogous to the syphilitic condylomata and skin papules seen during the secondary stage of syphilis. Fuchs,[6] in a case of syphilitic iritis, where no nodules were visible macroscopically, observed them by microscopic examination—there was no limiting membrane, no sharp line of demarcation; each papule consisted of small cells and in the center lay typical giant cells.

The observations of these latter authors refute the statement of Bull that only "iritis gummosa" should be designated as syphilitic iritis. Not all cases of iritis occuring in individuals who have become infected with syphilis are cases of syphilitic iritis, but in my opinion all cases of iritis occurring in syphilitics which respond to anti-syphilitic treatment are syphilitic in nature, even though no distinctive syphilitic features, as condylomata, papules, or gummata, are visible in the iris. To illustrate this point: I had a patient in whom the rheumatic diathesis was very marked; he contracted syphilis and later gonorrhœa, and when he came under my observation he had an acute iritis. He informed me that since he had contracted gonorrhœa ne had never been entirely free from a gleety discharge, but periodically it became much diminished and that during these quiescent periods he

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[5] Erkrankungen des Auges im Zusammenhang mit Anderen Krankheiten.

[6] Iritis Syphilitica, Archiv f. Ophthalmologie, Bd. 30, Abth. 3, p. 139, 1884.

always had an attack of iritis. This was clearly a case of gonorrhœal iritis in a syphilitic, and it yielded readily to atropin instilled into the eye, with irrigation and treatment of the urethral inflammation. Such cases as this should certainly not be classed as syphilitic simply because the person happens to have contracted syphilis.

Hirschberg[7] says that the incipient symptoms of syphilitic iritis are generally very insidious and consist in subjective sensations of light rather than failure of visual power and that almost every part of the eye is more or less affected.

My observation has been that the symptoms of plastic and serous iritis when due to syphilis vary little from the symptoms of these varieties of iritis when due to other causes. Pain is one of the most prominent symptoms, and it extends sometimes over the entire half of the head, corresponding to the branches of the supra-orbital nerve. The pain is usually worse at night, and is always aggravated by bright illumination. Schmidt-Rimpler[5] remarks that almost all cases due to syphilis are very plastic, and that attachments between the lens capsule and iris are frequent.

Swanzy[8] states that "the form with exudation on the surface of the iris and in the pupil is the one attended by the most severe pain; the form with punctate deposits on the posterior surface of the cornea as its main characteristic is generally unattended by pain; while the form with marked circumscribed deposits, or condylomata in the stroma of the iris, is often excessively painful, and again completely painless."

Vision is more or less impaired, depending upon the degree of involvement of the ciliary body. Friedenwald[9] makes the assertion that the cornea is affected in every case of iritis, and that in no case does it retain its perfect transparency. I do not agree with this statement, for in several of my cases the cornea was perfectly clear and transparent. I believe

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[7] Deutsche med. Wochenschr., October 25, 1888.

[8] Diseases of the Eye, Sixth Edition, p. 283.

[5] Loc. cit.

[9] Archives of Ophthalmology, April, 1896.

that if the ciliary body be involved in the inflammatory process to any appreciable extent, then we always have a deposit upon the posterior surface of the cornea. Inflammation of the iris, or of the ciliary body, independent of each other, is of rare occurrence—this is necessarily so, owing to the fact that histologically they are closely related; that they form a continuous membrane, and that they derive their blood supply from the same source. In some cases, however, we do have iritis without involvement of the ciliary body, but these cases are rare, and it is in them that the cornea remains clear. Personally I have never seen a case of cyclitis where the iris and the choroid remained intact during the inflammation in the ciliary body, but such a trustworthy observer as Swanzy[8] asserts that "it is matter of surprise to learn that any one of the three divisions of the uveal tract can undergo inflammation, while the other two remain perfectly healthy," and adds, a little further on, that this is by no means uncommonly the case.

In iritis the iris is very much congested, and this congestion causes a change in color—a blue or gray iris becomes green-looking, and a brown one more reddish brown. This symptom is more pronounced in irides of light color. The pupil is usually contracted and is very sluggish in its movements; this is due to three causes—congestion, the exudation of inflammatory products, and to attachment of the iris to the lens-capsule. There is usually peri-corneal injection, but I have seen cases of a quiet nature where this symptom was entirely absent, and where dilatation of the pupil had to be resorted to in order to make a diagnosis. Jackson[10] quotes Walker[11] in regard to this form of iritis. Walker describes it as "a painless iritis; an insidious and dangerous affection, easily mistaken for less serious diseases, and readily diagnosticated by the instillation of a mydriatic."

Syphilitic cyclitis may be plastic, serous, or gummatous in nature, and is almost invariably associated with iritis. Simple cyclitis without iritis occurs but seldom and then

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[8] Op. cit., p. 278.

[10] Sajous' Annual.

[11] Philadelphia Polyclinic, January 9, 1897.

only in the chronic form (Fuchs). The symptoms usually met with are pain, diminished vision due to deposits upon the posterior surface of the cornea, precipitates in the vitreous, and exudations between the iris and lens-capsule. My observation has been that when vision is much impaired the choroid is also usually involved. Ciliary injection is nearly always present, and the aqueous is turbid.

Galezowski,[12] quoted by Jackson,[10] in studying the manifestations of syphilis in the ciliary body, says:

"1. Whenever syphilitic iritis is accompanied by a punctate keratitis, either chronic or recent, areas of atrophic choroiditis will be found in the ora serrata.

"2. In parenchymatous interstitial keratitis, when due to hereditary syphilis, disseminated plaques which sometimes reach to the posterior segment, are seen in the ora serrata; more often, however, they are confined to the ciliary region.

"3. Diffuse syphilitic choroiditis, with disease of the vitreous, always presents atrophic alterations of the ora serrata, and the opacities of that humor are due to the latter lesion.

"4. In ataxic atrophy of the discs, atrophic and pigment changes occur in the ora serrata.

"5. In syphilitic inflammation of the cerebral or cerebrospinal nerves, characteristic signs of the disease appear in the ora serrata."

Cyclitis is invariably a dangerous disease and usually results in loss of vision. Bull[3] says that in cyclitis gummosa the gummatous infiltration has a strong tendency to involve the iris and sclerotic, and that in these cases the prognosis is most unfavorable—the eye usually becoming rapidly atrophic.

In one of my cases—a boy, aged 8 years, with inherited syphilis; unilateral iritis, cyclitis, interstitial keratitis (bilateral) and choroiditis all existed. There was a small gumma upon the iris near the ciliary margin. He was put upon vig-

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[12] Gazette des Hosp., April 18, 1894.

[10] Loc. cit.

[3] Loc. cit.

orous anti-syphilitic treatment, and in four weeks the gummatous growth had disappeared. After six weeks of active treatment the iritic and ciliary symptoms also disappeared—the keratitis prevented an examination of the choroidal condition. The patient, who lived in the Northwest, was brought here for treatment, and after six weeks returned to his home, consequently I lost sight of him and am unable to give the subsequent history of the case.

Gallenga,[13] quoted by Jackson,[10] reports two cases of syphilitic gumma of the ciliary body. "The tumor passed through the iris angle into the anterior chamber and invaded the iris—this latter was also the seat of the usual condylomata. In one case there was perforation of the sclera and conjunctiva through which most of the broken-down tumor-mass was evacuated." Under treatment the results in both cases were good.

The choroid can become secondarily involved in syphilitic iritis, or it can be diseased independent of inflammation in this structure—this latter is by no means uncommon. Of course, disease of the choroid can only be positively diagnosticated by means of the ophthalmoscope.

Fuchs[4] states that the visual disturbances in choroiditis are produced by implication of the retina and vitreous, and that the patient's attention is first directed to the eye by these complications; also that it is only later in the course of the disease, when atrophic spots have developed, that gaps in the visual field are noticed.

My observation has been that syphilitic choroiditis is always exudative in character, but Swanzy[8] remarks that in infancy purulent choroiditis may be caused by, or associated with, inherited syphilis. I have never seen a case of purulent choroiditis which I could attribute to syphilis—all of my cases of syphilitic choroiditis have been of the exudative form, consequently I shall deal with that form alone. The varieties of exudative choroiditis usually met with in syphilis are the disseminated, the central, and syphilitic chorio-

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[13] Annal. di Ottal., XXV, 2, 3, p. 210.
[10] Loc. cit.
[4] Op. cit., p. 358.
[8] Op. cit., p. 307.

retinitis. Fuchs speaks of an anterior choroiditis in which the exudative spots are deposited at the periphery of the choroid and which is sometimes combined with choroiditis surrounding the papilla. He attributes this form to inherited syphilis, and remarks that it is usually observed in young persons. Schmidt-Rimpler[5] says that in choroiditis due to syphilis the changes in the choroid are located either in the region of the macula and appear as pink, light-yellow, or white spots, or are situated in the extreme periphery, in which case usually small black spots adjoining pale ones are visible; also that occasionally choroiditis areolaris may exist. In my eight cases of syphilitic choroiditis occurring during the past twelve months, four were central in character and four of the dissemminated form. In all the cases of central choroiditis a central defect of vision existed.

Förster,[14] quoted by Schmidt-Rimpler, has observed that not seldom in the variety of choroiditis, where the blood-vessels at the posterior pole of the eye are altered, a defect of the visual field exists which encircles the fixation point—the periphery remains free, and even the region near the fixation point functionates, but in a lessened degree.

In central choroiditis there is always an exudate in the region of the macula, and absolute central scotoma is a prominent symptom (Swanzy). In disseminated choroiditis the ophthalmoscopic appearances consist of haziness of the vitreous, and circumscribed pinkish-yellow exudations (in recent cases) in the choridal tissue. These exudations can be absorbed, leaving a comparatively healthy choroid, or they can result in atrophic cicatrices—in which case round white spots with pigment borders, or pigment spots will take their place (Swanzy). Usually the exudations at first are peripherally situated; but with each successive recurrence of the disease an advance is made toward the macula.

In regard to syphilitic chorio-retinitis, I am of the opinion that generally the process is primarily one involving the

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[5] Loc. cit.

[14] Zur Klinischen Kenntniss der Choroiditis Syphilitica, Archiv f. Ophthalmologie.

choroid, and that the retina is only secondarily involved. I do not mean to intimate that a primary syphilitic retinitis does not occur, for Nettleship has anatomically demonstrated that it does occur. There is a fine dust-like opacity diffused through the vitreous in this condition. Some authorities go so far as to say that this variety of opacity is almost pathognomonic of syphilis. The retina is principally involved in the region of the optic nerve entrance—that is, in this region there is an opacity of the retina which diminishes peripherally. The borders of the optic nerve are indistinct and the optic disc is somewhat hyperæmic. Choroidal changes exist as in disseminated choroiditis, but in a modified form. Vision is impaired as the disease progresses toward the macula, and in its later stages scotomata are frequently met with, and interfere with vision in proportion as they are centrally located. Flashes of light are complained of in nearly all cases.

Syphilitic disease of the deep layers of the cornea should also be dealt with under this heading, as these layers, according to the teachings of embryology, constitute a part of the uveal tract—this, however, would produce too lengthy an article, so I have confined myself to a discussion of the clinical and pathological conditions produced by syphilis in the iris, ciliary body, and choroid, leaving such affections as keratitis parenchymatosa and keratitis punctata syphilitica for discussion at some future time.

Dasenberg, of Regensburg, reports on his experiences with Dionin (*Wochenschr. f. Ther. und Hyg. d. Auges*, No. 32, 1900). He considers it to be an excellent local irritant, the action of which is due to a flooding of the whole conjunctival sac and of the lid-margins with lymph. With the exception of fresh epithelial injuries, it acts well in all affections of the cornea, also in clearing up exudations and opacities in the anterior chamber and vitreous body, of lens particles after discission and extraction; frequently, also, in inflammations of the uveal tract. It is contraindicated in all recent corneal injuries, in recent corneal ulcers, and in all penetrating operations on the eyeball. It is questionable whether it has a direct antiseptic action.

STUDIES CONCERNING THE ANATOMY OF THE EYELIDS, ESPECIALLY THEIR GLANDS.*

By ADOLF ALT, M.D.

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AMONG the subjects which have for years engaged my especial interest, the more minute anatomy of the eyelids and their appendages has been one of the foremost on account of its practical bearing on many clinical problems. When consulting the different text-books, including Graefe and Saemisch, and even the most recently published, "System of Eye Diseases," by Norris and Oliver, I found the descriptions and statements of the different authors to be so much at variance with each other that the more I tried to harmonize them, the more puzzled I became.

I have, therefore, for a number of years collected all the material I could get for the study of the anatomy of the eyelids; much of it was of necessity pathological. Still, I think, my studies have reached such a stage, that their results may be of some interest to your.

In this abstract paper I want to confine my remarks exclusively to the glands which are found in the lids and their neighborhood. This, I hope, will afford you a fuller understanding of the lantern slides.

In the orbit behind the outer upper margin lies the orbital lachrymal gland. This is a more or less compact body of glandular tissue of the acinous type. It is inclosed in a connective tissue capsule by which it is held, so to speak, in the lachrymal fossa and trabecules of which separate the different lobes of the gland. Its shape resembles somewhat that of an almond, convex on the upper, concave on the lower side.

Its size varies considerably. As an interesting fact I may state that, as a rule, I find it very much larger in the negro than in the Caucasian, often twice as large.

Below this gland and separated from it by the levator of the upper lid and Müller's non-striated muscle embedded in

*This abstract was read in explanation of a large series of lantern-slide illustrations.

the loose tissue of the lid outside the tarsus, lie a larger and varying number of glandular acini of exactly the same structure. They reach in most eyelids down to the lower part of the lower eyelid. They have been named the lower, accessory, conjunctival or palpebral lachrymal glands. Separate acini of the same glandular structure are found above the fornix of the conjunctiva reaching towards the nasal side sometimes as far as the middle of the upper lid.

All of these glands consist of cylindrical cells arranged around a lumen and forming round or oval acini. The ducts by which their secretion—the tears, is carried into the conjunctival sac are also lined with cylindrical epithelium. The number of ducts is usually stated to vary between six and and twelve, one of which is generally considerably larger than the others. It is also stated that the ducts of all accessory glands empty into those of the orbital gland on their passage downward. This may be so, but I have usually found the accessory glands to have separate ducts. Of course, those in the lower lid must always have them. The ducts of the accesory gland near the middle of the lid above the fornix often reach the conjunctival sac in a row side by side.

Furthermore, I find isolated smaller glands consisting of one, two and three, rarely of four lobules, histologically of exxactly the same structure and with the same ducts leading their secretion to the conjunctival sac, without exception, in the conjunctiva above the tarsus on the *nasal* side of the upper as well as the lower eyelid, and often one on the *temporal* side of the lower eyelid.

If I am correct in the opinion that these glands are all lachrymal glands (and histologically they are absolutely alike) it is clear why, after removal or destruction of the orbital lachrymal gland and perhaps of the accessory lachrymal glands in the temporal half of the eyelids, the eye does not become dry, and, on the other hand, why a chronic inflammatory condition which leads to the atrophy of all these glands by the shrinkage of the conjunctival tissue or at least to the obliteration of their ducts (as in trachoma) invariably produces xerophthalmus.

The Meibomian glands, about thirty in the upper, and twenty in the lower lids, are sebaceous glands forming vesi-

cle-like lobules lined with flat epithelium, which, like grapes to the stem, are attached to the long central duct. These lobules form usually four rows around the duct. There is, however, only one layer of Meibomian glands, and statements referring to two layers are probably based on oblique sections. The dermal epithelium at the orifice of their efferent duct at the lid margin reaches for quite a distance inwards. In this respect as well as in their general structure the Meibomian glands do not materially differ from other sebaceous glands, especially those attached to the lashes. As the tarsal tissue with its convex upper (in the lower lid lower) outline grows lower on the nasal and temporal sides, the Meibomian glands vary in the length according to their situation and are longest in the middle of the tarsus and smaller at the sides. In general they lie parallel to each other and at right angles to the lid margin, yet deviations from this arrangement are not uncommon.

The second kind of glands, in the tarsal tissue, again do not histologically differ in their structure from the lachrymal glands. They are usually called mucous glands; some observers, among whom is Waldeyer, call them acino-tubular glands, and compare them to Brunner's glands in the intestines. In the norm and when fully developed, they consist of lobules formed of acini, consisting of cylindrical cells arranged around a lumen and have ducts lined with cylindrical cells, just like the lachrymal glands. They vary considerably as to location, size and shape, and in pathological lids are often totally wanting. In the norm they are almost always found as larger bodies in the temporal half of the upper and lower lid, just above or below the Meibomian glands. I find, however, quite often just such glands interspersed also between the Meibomian glands and sometimes almost near the lid margin. In some lids I find them also in the nasal half. Their ducts open into the conjunctival sac, through the palpebral conjunctiva.

In the lid margin a peculiar form of glands is found in great numbers, which have first been described by Moll, and were by Waldeyer termed the modified sweat-glands. These peculiar glands lie between the roots of the eyelashes and in horizontal sections or sections parallel to the surface they

are seen to be exceedingly numerous, in normal lids. At the inner canthus I find always a larger package of these structures to the nasal side of where the lashes cease.

These glands are formed of one or two rows of the vesicle-like, oval and round, sometimes very wide cavities, lined with a cylindrical epithelium. These cavities often end toward the lid margin in a larger one from which the efferent duct starts. This duct lined with cylindrical epithelium runs in a more or less curved line towards the lid margin and empties either into the duct of a sebaceous gland or separately in the skin. What the character of the secretion of these glands is, is as yet unknown.

The sebaceous glands of the lid margin which open into the hair follicles of the lashes show nothing peculiar, except that instead of one to one hair, there are usually two and very often three or four.

There is another little interesting organ at the inner canthus—the caruncula lachrymalis. It consists very largely of glandular tissue. In vertical or horizontal sections I find usually three large sebaceous glands, which differ from the Meibomian glands only in length. Like Waldeyer, I find now and then a so-called modified sweat-gland. As an almost invariable rule, I find in it one, more often two, small glands of the acinous type and exactly like the lachrymal or mucous glands, one situated near the upper and one near the lower side of the caruncle. They have a duct lined with cylindrical epithelium, the orifice of which lies either on the surface of the caruncle or in the plica semilunaris. In one case I found a small amount of cartilage tissue just beneath the caruncle, the only cartilage I ever found in the lids or their appendages.

As a peculiar condition I find the orifices of the glandular ducts in the conjunctiva almost always surrounded by a dense cellular infiltration, so dense often that it hides the duct. It is not improbable that this condition has given rise to the often repeated statement that the normal human conjunctiva contains lymph-follicles. I have not yet found anything that I could look upon as such a structure.

A COMPARISON OF THE CYCLOPLEGIC ACTION OF SCOPOLAMINE AND ATROPINE.*

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THE intention of this paper is to present as concisely as possible the results of a short series of experiments with the above-named drugs, undertaken with a view of ascertaining whether the brief effects of the former can be considered as final, or only approximate, when used in the ordinary way. The writer does not believe that inability on the part of the patient to read coarse print at reading distance is sufficient evidence that cycloplegia is complete; hence the comparison was made with atropine as being the nearest approach to security that we possess.

Between February 19 and April 26, 1900, thirty cases (fifty-nine eyes), varying in age from 9 to 48 years, in which the investigation could be so conducted as to constitute a continuous procedure, in order to eliminate any possibility of change in refraction during an interval, were selected from private and dispensary practice. No eyes in which pathological conditions existed were included. On the day of the preliminary examination, or three or four days later, a one-half per cent. solution of scopolomine in conjunction with cocaine was instilled by myself every fifteen or twenty minutes, for an hour and a half or two hours. After determining the refraction in this condition, a prescription for a one-half per cent. solution of atropine was given to be used by the patient three times a day for two days just prior to the next examination, when the refraction was again determined. In each instance this was done with scrupulous care by subjective and objective methods, checking and re-checking the results.

The maximum difference in hypermetropia, out of 23 instances, was 1.25 D.; in myopia, 1 D. out of 9 instances; in asthenopia, .75 D. out of 31 instances. Non-coincidence of

*Read before the Section of Ophthalmology of the American Medical Association, May, 1900.

axis in 11 eyes, both eyes of 1 case showed no difference in refraction—maximum discrepancy, 90°; suppressed hypermetropia (that is where no hypermetropia was shown by scopolamine) 12 eyes in 10 cases; suppressed asthenopia, 3 eyes in 2 cases. Spherical and cylindrical discrepancies were almost equally divided—38 eyes in the former class, and 37 in the latter. In 26 out of the 30 cases, or nearly 87 per cent.; or more properly speaking, 54 out of 59 eyes, nearly 92 per cent. of the eyes, the results of scopolamine contrasted unfavorably with those of atropine. In only 1 of the 30 cases did both eyes of the patient show the same refraction under each drug. The discrepancies were not startling in any instance, and the series is not extensive; but if our present tendency to refinement of accuracy as a basis of judgment, is well founded, these distinctions are of value, and the number of cases seemed sufficiently large to indicate a uniform tendency in the practice of one observer without increasing it merely for the sake of the added dignity it might have.

It is not denied that evanescent cycloplegics are of great value as expedients in many cases; but as a final reliance scopolamine is thought to be untrustworthy.

REPORT OF A CASE OF CHOROIDAL SARCOMA IN A SYPHILITIC.*

By M. H. POST, M.D.,

ST. LOUIS, MO.

THE case I have to report this evening is of no especial interest from the standpoint of the ophthalmologist; its special interest is from the standpoint of the general pathologist, as it is a case in which a choroidal sarcoma attacked an individual, who in his younger days had had syphilis, and later a tuberculous testicle.

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*Read before the Medical Society of City Hospital Alumni, May 17, 1900.

Mr. S. consulted me some fifteen years ago on account of a myopia of 5.5 D., with V.=$^{16}/_{XXV}$, either eye. He again consulted me October 3, 1899, at which time he was 54 years old, stating that the sight of O.S. had been failing for about two months.

Examination gave myopia O.D. 9 D., V.=$^{20}/_{XXIV}$; O.S. 9 D., V.=$^{3}/_{LXXV}$. With the ophthalmoscope the retina to the nasal side of the macula was seen to be pushed forward and to project over the disc. Toward the macula the retina sank gradually back to its normal level.

To see the fundus near the swelling with the ophthalmoscope by the direct method required —10 D. spherical; to see the most anterior part of the swelling required only —3 D. spherical, giving a difference between the base and apex of the projection of 7 D. The retinal vessels could be distinctly seen on the most anterior portion of the swelling. There were floating masses in the vitreous.

We seemed to have either a choroidal exudation or a choroidal sarcoma. The presence of floating masses in the vitreous would suggest that it was a condition of choroidal exudation, and to give the patient the benefit of the doubt, bichloride of mercury was given in one-tenth grain doses three times a day, and the eye kept under careful observation.

For a time there was some improvement, vision rising on October 31st to $^{3}/_{XXXVIII}$ (?). After that, however, the tumor slowly increased, and on December 20th, its apex could be seen with —0.5 D. Strangely enough, the fovea was carried forward without destroying the power of vision. The myopia being reduced from 9 D. to 4 D., V.=$^{20}/_{CL}$: $^{3}/_{XXXVIII}$ and $^{3}/_{XIX}$ (?). Tension remained normal. Floating masses persisted in the vitreous.

These changes made us feel confident that we were dealing with a tumor and not with an exudation. Many years ago the patient had had syphilis, and ten years previous Dr. H. H. Mudd had removed a tuberculous testicle. At this time Dr. W. E. Fischel was called in consultation, as Mr. S. had formerly been in his care. Dr. Fischel considering it very unusual for sarcoma and lues to exist in the same person, suggested that it might be a gumma, and advised trying the

effect of iodide of potassium. This was done, and by January 3rd, of this year, the patient was taking cxx gtt. of a saturated solution three times a day with no benefit.

The reason for suspecting it to be a gumma was the history of the case. The reasons for believing it not to be a gumma were that it had not diminished under the exhibition of large doses of the iodide of potassium, and that gummata in the interior of the eye usually, if not always, are in the iris or the ciliary body. I have been unable to find any recorded cases of gummata in the eye posterior to the ciliary region.

In view of these facts and reasons the eye was removed. Sections of the eye and tumor were made which demonstrated the tumor to be a medium-sized spindle-cell sarcoma.

We thus have an individual who suffered in succession with syphilis, tuberculosis, and sarcoma, and I will add that to-day he seems to be a very healthy person.

DARIER, of Paris (*Die Ophth. Klinik*, No. 9, 1900) recommends a 5 per cent. solution of Dionin as an analgetic in eye affections. One drop instilled into the conjunctival sac causes a burning sensation, like cocaine, but of longer duration. These instillations are repeated with intervals of a few minutes until a pronounced chemosis appears. With the chemosis the analgetic effect of the remedy shows itself, without, however, producing a true anæsthesia of the cornea. It is useless to continue the instillations when the chemosis is established, because the tissues get rapidly accustomed to the effects of dionin. The 5 per cent. solution may be given the patients to use at home, but they must be instructed to use the dionin only in real and continued great pain. When the pain is excessive, inspergations of powdered dionin or subconjunctival injections of a 5 per cent. solution are of value; 0.01 gramme of dionin may, without damage, be injected under the conjunctiva.

MEDICAL SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Thursday, June 14, 1900.

G. ANDERSON CRITCHETT, M.A., F.R.C.S. Edin., President in the Chair.

OCCLUSION OF BOTH CENTRAL ARTERIES OF THE RETINA.

MR. W. H. JESSOP.—The patient, a woman, 35 years of age, married nine years, has no living children. She had had one miscarriage soon after marriage, and eight months ago she was delivered of a child at the ninth month which only lived a few hours. On October 24, 1899, on awaking she found she could not see with the right eye, although she was quite well at the time and had no previous illness, except an attack of influenza nine years ago, and epistaxis two years ago, which continued for some weeks. On ophthalmoscopic examination the eye presented the symptoms of embolism of the central artery. V.= doubtful P. L. The left eye was normal. On December 28, 1899, she suddenly at 11:20 A.M. lost the sight of the left eye, and on examination all the signs of embolism of the central artery were present and V. = no P. L. At the present time both optic discs were atrophied, the retinal vessels were reduced to mere threads, and in places there was a white thickened condition of the sheath (periarteritis). The vision of the right eye had improved to $^{6}/_{\text{XXXVI}}$, but that of the left was P. L. only. The patient had been treated with mercury by inunction and internally.

The interest of the case was in the arteries of each eye being affected and in the fact that the only symptom and sign pointing to embolus was the suddenness of each attack. No possible source of the emboli could be suggested. This

rather pointed to a retinitis being the predisposing cause, and considering the great improvement of the vision under treatment it was probably of syphilitic origin. The changes seen in the vessels pointed to arterial degeneration.

Mr. Collins described the case which he had shown before the Society in 1897. The patient also had epistaxis and amenorrhœa.

Mr. Abercrombie asked if the patient had any uterine disease.

Mr. Doyne thought that after embolism the peripheral parts of the retinal vessels were usually somewhat larger than the central portion, and this not being the case in Mr. Jessop's case he thought suggestive of arterial disease, being the chief cause of the condition.

Mr. Jessop, in reply, said he agreed with Mr. Doyne, and also stated that there was no uterine disease.

The Arithmetical Triangle in Ophthalmology.

Mr. C. Wray read a paper entitled the Arithmetical Triangle in Ophthalmology: How to Use It and What It Reveals. This method of investigation was a new one, and the author's plan of using it was as follows: Determine the maximum negative error of refraction, and assume provisionally, in accordance with the general law of error, that the positive error will be equal in amount and frequency. The paper assumed the negative error +11, that is 1 D under E, and this suggested the use of the 23rd line of the triangle, with the result E=15 per cent., M 26 per cent., H 59 per cent., and myopia over —6 D 0.66 per 1,000, the minimum number found in any province of France being 1 per 1,000 (French Army Statistics). If the 25th line were used under the assumption that the commonest refraction is E, then there would be E 13.2 per cent., M 43.4 per cent., and H 43.4 per cent. This would raise the myopes with over — D far over 14.7, the very highest number that occurred per 1,000, and prove E as the commonest refraction impossible. It would appear as though the highest myopia transmissible was —11, and that the maximum grades were due to non-hereditary causes acting in addition. Mr. Wray deduced that there was no evidence that the effect of civilization was

so serious as it was usually thought, seeing an increase of 1 D in the commonest of normal refraction was an impossible and unnecessary hypothesis. Indeed, in that case there would be 3 cases per 1,000 with over 6 D of myopia from heredity alone, not counting those classed as over 6 D from such patients. Generally preferring a —6.5 lens spasm of accommodation, and anyhow seeing the maximum is 14.7, very little room was left for the causes that operate seriously in causing acquired myopia. As the details of the paper were of an extremely technical character reference must be made to the Society's *Transactions*.

Congenital Papilloma of the Conjunctiva.

Mr. Simeon Snell (Sheffield) related this case, which occurred in an infant, 5 months of age.

The tumor hung form between the eyelids, and fell over the lower lid at about its outer third, the lower part of the growth being enlarged into a rounded ball about the size of a small pea. It was attached to the conjunctiva about halfway between the corneal margin and the inner canthus, and somewhat broadened out at this attachment. The stalk measured about half an inch, but traction readily lengthened it to an inch. The growth was snipped off with scissors.

The specimen was kindly examined by Mr. Treacher Collins, who reported that its microscopical appearances were similar to those of a dermoid of the eye.

Mr. Griffith thought that the case should really be called a dermoid tumor, and with this opinion both Mr. Collins and Mr. Snell agreed.

Periarteritis of the Retinal Arteries.

Mr. Simeon Snell related a case, and exhibited an ophthalmoscopic drawing.

The patient was a woman, 43 years of age, and when first seen the sight in the right eye had been failing for about four months. On ophthalmoscopic examination one was at once struck with the peculiar appearance of the arteries on the optic disc, which was encased in a snowy white and somewhat glistening sheath. This appearance extended only a short distance beyond the optic papilla, and was con-

fined chiefly to the arteries on the expance of the disc. V.= $^{1}/_{LX}$. There was only one small hæmorrhage in the retina, but now there were two others on the disc. In the left eye the appearances were very much less marked, but the disease was evidently commencing. V.=$^{6}/_{IX}$. The urine contained a trace of albumen, and there were granular casts. The arteries were rigid and tortuous, and there was hypertrophy of the left ventricle.

Reference was made to Mules' case recorded in the *Transactions* of the Society, Vol. II; but in the present instance, whilst the changes were confined to the optic disc and its immediate neighborhood, they appeared to be much more pronounced.

Mr. Jessop asked if the fields of vision were contracted, and, in reply, Mr. Snell stated that such was the case.

An Illustrated Work on Foreign Scenery.

Mr. Snell also exhibited an illustrated book on foreign scenery. The interest attaching to the work was that the illustrations, which were very numerous and of a high-class character, had all been executed by a gentleman, a patient of his, who had several years before undergone extraction of cataract in one eye. The other eye was useless for visual purposes, owing to complete cataract. The same gentleman, an amateur artist, had been a successful exhibitor at the Royal Academy, but before the operation his paintings had not been accepted.

Ophthalmitis Associated with Meningitis.

Mr. Sidney Stephenson read notes of a case of ophthalmitis in a child of 7 months, associated with a simple posterior basic meningitis.

An effusion of lymph into the anterior chamber of one eye was soon followed by closure of the pupil, diminution of tension and shrinking of the globe. Death took place on the thirty-third day of the disease, which was characterized by retraction of the head, convulsions, progressive wasting and fluctuating temperature. At the necropsy lympho-pus was found on the medulla and surrounding parts, and could be traced along the crura, optic tract and commissure to the

left optic nerve. The meningeal exudation was found to contain several micro-organisms, including the diplococcus intracellularis meningitidis of Weichselbaum. Microscopically, evidences of inflammation were traced from the chiasma and along the optic nerve to the papilla of the inflamed eye. The essential pathological changes in the eyeball itself were neuro-retinitis along with diffuse inflammation of the uveal tract.

Mr. Stephenson concluded that inflammation passed from the cerebral meninges, along the optic nerve to the eyeball, probably by means of the perivascular lymph sheaths.

Bullet Wound in the Orbit.

Mr. F. W. Ogilvie showed a patient who shot himself in the right temple with a revolver on December 6, 1899; the bullet did not emerge. He never lost consciousness, but the sight of the right eye was immediately lost, while that of the left became reduced. On December 10th the right eye was excised, but it was found not to have been perforated as had been supposed, nor was the optic nerve cut. The vision of the left eye improved from less than $^{6}/_{LX}$ to $^{6}/_{XXIV}$ and J. 4. Ophthalmoscopically the eye showed a very remarkable central lesion. The disc and vessels were normal, but at the macula was a slightly irregular oval area quite sharply defined and depressed below the surrounding fundus looking almost as if a trephine had been applied, and this part of the retina bodily removed, the depression amounting to 2 D. The bullet was located with great exactness in the left orbit almost in contact with the posterior and nasal sides. A number of very beautiful skiagraphs taken by Dr. Mackenzie Davidson were shown illustrating this. Mr. Ogilvie concluded by calling attention to the comparatively small amount of damage done by the bullet in its passage through one orbit to the other.

Card Specimens.

The following specimens were shown: Mr. J. Rowan.—Sections of the healing stump of an optic nerve four days after enucleation. Mr. J. Hern.—1. A case of essential shrinking of the conjunctiva; 2. Persistent papillary mem-

brane; 3. Case of abnormally large cornea and deep anterior chamber. Mr. H. E. Juler.—Retinal detachment (?) or intraocular growth.

Friday, July 6, 1900.

G. Anderson Critchett, M.A., F.R.C.S. Edin., President, in the Chair.

"Holes" at the Macula.

Mr. F. M. Ogilvie read a paper on one of the results of concussion injury of the eye—"holes" at the macula. He had collected all the published cases presenting this lesion, and he divided them into two large classes:

A. Those in which there was no detachment of the retina, and

B. Those in which detachment was present.

He showed lantern slides of the appearaces of the fundi in all these cases which invariably followed concussion injuries, such as blows from blunt objects, from stones thrown from catapults, while one most interesting case he had previously shown to the Society in which the injury was due to a bullet which apparently hit the back of the eye in passing through the orbit. He advanced several theories to account for the holes which, as a rule, were about one and a half dioptre in depth. He summarized the conditions brought about as follows:

1. The lesions are definite and central.
2. They are the direct result of violence.
3. The injuries are permanent.
4. The general disturbance of vision is not great.
5. They are the result of concussion injuries only.

Mr. Adam Frost indorsed all that Mr. Ogilvie had said regarding the appearance of the lesion, and in view of the fact that no case had as yet been examined pathologically he suggested that possibly a similar condition might be brought about by a like injury in the eyes of animals or in eyes recently excised.

Optic Nerve Tumors Previously Reported.

Mr. C. Devereux Marshal read some further notes of a case reported to the Society in November, 1899. The patient was a woman, 46 years of age, upon whom he operated at the request of Mr. Poulett Wells on November 30, 1897, when the contents of the orbit were thoroughly removed. She remained in very fair health until shortly before her death, which took place on May 4, 1900 (two and a half years later). Owing to the kindness of Mr. Austin Reynolds, who attended her up till the time of her death, which occurred very suddenly, Mr. Marshall was enabled to obtain a post-mortem examination. The necropsy was made May 6, and the following was the condition found:

On removing the calvaria the middle meningeal vessels were found to be distended, and the Pacchionian bodies very large. The cerebral convolutions were very much flattened. The optic chiasma had entirely disappeared and its place was occupied by a large diffuse and very soft tumor, about the size of a bantam's egg. So soft was it that its actual limits could not be defined, and the greater part of it could easily have been washed away with a moderately strong stream of water. The center of the growth was the right optic tract, and it spread along the chiasma, involving the optic tract and optic nerve on the left side, both of which were considerably enlarged. The tumor reached the pons on both sides, invaded the lateral and third ventricles, and on the left side the optic thalamus and corpus striatum. The growth was so very diffuse that it appeared that the third, fourth, fifth and sixth nerves on both sides were more or less included in it. On both sides the under surfaces of the temporo-sphenoidal lobes were invaded. The tumor was still further broken down by recent hæmorrhage in the vicinity of the left optic tract. No separate deposits were found in the brain, and the growth had evidently spread by continuity only. In the thorax nothing abnormal was found, except that the mitral valve was very much thickened. In the liver a few cysts were found containing clear fluid, but it was otherwise healthy, and there was no sign whatever of any new growth. The spleen, pancreas and uterus were free from disease, but the kidneys were slightly granular, and

the capsule tore the kidney tissue in separating. The aorta was somewhat atheromatous. The microscopical appearance of the growth closely resembled that of the original nerve tumor. The main substance of it was made up of a network of irregular branching cells, in which were small spaces, mostly circular, similar to those described as being present in the original nerve tumor, and which were thought to be channels from which the nerve fibers had disappeared. Seeing that this also was a growth mainly involving the medullated nerve structure, probably the same explanation of the spaces held good. Here and there in the growths were strands of a dense fibrous tissue in which blood vessels were seen in section.

Briefly, the neoplasm seemed to be due to an immense overgrowth of the connective tissue framework of the nerve, mainly the neuroglia, but also of the more fibrous prolongations from the pial sheath. The optic nerve on the opposite side was much enlarged, and on examining it microscopically the sections were seen to present precisely similar appearances to those of the right nerve, which was described in the first paper.

Mr. Marshall added that in the last volume of the *Transactions* would be found a paper by Buller and himself, the basis of which was a case of optic nerve tumor somewhat similar to the one described that evening, and at the present time (three years after removal) the patient was alive and well. In that paper the question of prognosis was fully discussed, and the conclusion arrived at from published cases was that the disease, although of not a very malignant type, could by no means be considered innocent, and it was advisable to remove it as thoroughly as possible. This remark was justified by the present case, which, although removed as completely as possible, yet the nerve was affected further back than the orbit, and this was of course the way by which the growth reached the brain.

Pseudo-Glioma.

Mr. Percy Flemming read a paper on three cases of ophthalmitis (pseudo-glioma) in children.

Case 1.—Recovered after four months' illness, the main

symptoms being irregular pyrexia, vomiting, head retraction and diarrhœa. There was a history of convulsions and ear discharge, but no history of syphilis or acute specific fever.

Case 2.—Died with typical posterior basic meningitis and pus in right middle ear. (This patient had an attack of chicken-pox four weeks after the eye became affected).

Case 3.—Died after an illness very similar to Case 1, and post-mortem was found to have basic meningitis; middle ear healthy.

These cases, considered in relation with others published, might be taken to indicate that meningitis was the common cause of this particular form of ophthalmitis, and, further, that middle-ear disease was a likely cause of the meningitis. The following objections were urged against this view:

1. The fact that these cases in children rarely ended fatally.

2. Pseudo-glioma was a rare complication of the posterior basic meningitis, as was also optic neuritis.

3. The usual unilateral character of the affection.

Mr. Flemming considered that the eye condition was part of a septicæmic or pyæmic process, which in most cases was limited to the eye, such cases recovering; whilst in others the meninges might be affected by the same process, these cases terminating fatally. The otitis might be the starting point of the infection, and in any case of ophthalmitis (pseudo-glioma) it was most important to have the ear examined, and even to puncture the membranes though apparently healthy.

Card Specimens.

The following specimens were shown: Mr. W. H. Jessop.—Tuberculous ulceration of the conjunctiva. Mr. E. W. Brewestón.—Case of pseudo-glioma. Mr. W. T. Holmes Spicer.—Section of conjunctiva from a case of spring catarrh. Mr. W. Adams Frost.—Peculiar concentric opacities in the cornea. Mr. Treacher Collins.—A case of congenital notch in each lower lid with defective development of the malar bones.—*British Medical Journal.*

ABSTRACTS FROM MEDICAL LITERATURE.

By W. A. SHOEMAKER, M.D.,

ST. LOUIS, MO.

SEQUENCE OF CHANGES IN THE OPTIC CHIASM PRODUCED BY ACROMEGALIA AS EXEMPLIFIED IN THREE CASES.

Ward A. Holden (*Archives Neurology and Psychopathology*, Vol. II, Nos. 3 and 4, 1899) describes the results of examinations of three cases of distorted chiasm in acromegalia, and notes the gross changes that may occur in this condition, as follows: the posterior portion of the chiasm is compressed by the pituitary body. Following this, the posterior and middle portions of the chiasm are flattened and forced upward, and thus separated from the anterior portion, which is protected by the bone beneath it. Later, with this tilting upward of the chiasm posteriorly and the forcing forward of the anterior wall of the pituitary fossa, the anterior portion of the chiasm is encroached on by the pituitary body and arched directly forward. Finally, the chiasm may be severed completely.

He has studied the atrophy of the optic nerves in these cases and points out the changes which should occur in the visual field.

In the cases of acromegalia in the literature, visual disturbance has been noted in about half of them, and in the rest there has been concentric contraction of the visual field with diminution of central acuteness of vision; and in somewhat less than one-half, bitemporal heminaopsia, absolute or for colors only, with or without some contraction of the nasal halves of the fields. In six cases there has been homonymous hemianopsia, absolute or for colors only, and in one case there was found binasal hemianopsia. The type of the contraction of the field may change with enlargement of the pituitary body. Homonymous hemianopsia from pressure on one tract will become complete with involvement of the

chiasm, and the bitemporal hemianopsia may also lose the nasal field in a similar way. The visual disturbances in acromegalia usually appear late in the disease, though there is no rule as to their course.

A CASE OF EXTENSIVE DETACHMENT OF THE RETINA IN A MYOPIC EYE, IN WHICH COMPLETE RECOVERY FOLLOWED REST IN BED AND THE ADMINISTRATION OF PILOCARPINE.

Samuel Theobald (*Archives of Ophthalmology*, January, 1900). The treatment was begun within four days of the occurrence of the detachment, and to this fact the successful outcome of the case is, perhaps, in a considerable measure, to be attributed. The detachment was so extensive as to preclude any ophthalmoscopic view of the papilla, and sight was reduced to ability to detect movements of the hand in the upper and outer portion of the field.

Pilocarpine muriate was given by the mouth in increasing daily doses, beginning with gr. $^1/_6$, for nineteen days; the maximum dose reached being gr. 1. The patient was confined to the bed for two weeks, and kept in the hospital for five weeks. The administration of the pilocarpine was followed by 5-grain doses of potassium iodide. Within five weeks of the commencement of the treatment the retinal detachment had markedly decreased, and at the end of three weeks it had entirely disappeared. Vision gradually improved to $^{20}/_{LX}+$. When last seen, fourteen months had elapsed since the re-attachment of the retina, and there were no signs of a recurrence of the trouble.

A RARE OCULAR COMPLICATION OF MIGRAINE.

Johan Holmström has published in the *Nord. Med. Arch.*, No. 21, 1899, a paper on glaucoma as a complication of migraine, and has illustrated it with an account of a case—the first on record of such a condition—an abstract of which from the Danish is given by Dr. Raul Heiberg, of Copenhagen (*Rev. Neur.*, December 30, 1899). It was stated by Möbius, in his monograph on migraine, that an attack of that disease may possibly provoke glaucoma. The case now published by Holmström is as follows:

Mdlle. A., 47 years of age, had suffered since the age of 22 years from attacks of severe migraine every fortnight. During recent years the patient noticed that her sight grew dim during the attacks and she perceived rainbow-colored circles around the flame when looking at a lamp. These visual troubles vanished before the close of the attack of migraine. At this time she did not suffer from any symptoms which could be attributed to glaucoma, and the diagnosis made when the patient was seen was ophthalmic migraine. Three months after this the patient sought advice again and stated that at the attacks of migraine following the above the sight of the right eye was very much obscured and that no improvement of this obscurity of vision took place at the end of the attack. On examination the right eye was found to show pronounced glaucoma, and on the following day iridectomy was performed with benefit. The patient has had attacks of migraine since the operation as she had had before. During the attacks the sight of the left eye grows dim and she then perceives rainbow-colored fringes around the flame of a lamp.

At the end of eighteen months the left eye—whose visual troubles were temporary, became more seriously affected. The obscurity of vision during an attack of migraine now persisted long, and on the patient seeking advice it was found that this eye was also the subject of glaucoma. The indications for operation were favorable, as the right eye had already been benefitted by an operation.—*British Medical Journal*, March 24, 1900.

REFLEX AMAUROSIS.

H. C. Sloggeth (*Annals of Ophthalmology*, April, 1900) reports a case of amaurosis due to reflex from the teeth. The condition is unique in his experience, and he found it mentioned only by Swanzy, and by him discredited. Sloggeth's patient had had no toothache or pain in the teeth during the manifestation of the eye symptoms, which were completely relieved by the extraction of the decayed roots. The ophthalmoscopic examination throughout had been negative, while light perception was entirely lost during the attack.

BOOK REVIEWS.

INJURIES TO THE EYE IN THEIR MEDICO-LEGAL ASPECT. By S. BAUDRY, M.D., Professor in the Faculty of Medicine, University of Lille, France, etc. Translated from the original by ALFRED JAMES OSTHEIMER, JR., M.D., of Philadelphia, Pa. Revised and edited by CHARLES A. OLIVER, A.M., M.D., Attending Surgeon to the Wills Eye Hospital; Ophthalmic Surgeon to the Philadelphia Hospital; Member of the American and French Ophthalmological Societies, etc. With an adaptation of the Medico-Legal Chapter to the Courts of the United States of America, by CHARLES SINKLER, ESQ., Member of the Philadelphia Bar. Size $5^5/_8 \times 7^7/_8$ inches. Pages, x–161. Price, Extra Cloth, $1.00, net. [The F. A. Davis Co., Publishers, Philadelphia.]

Drs. A. J. Ostheimer and A. Oliver deserve the thanks of the English-speaking ophthalmic public for the translation of this exhaustive and practical treatise on injuries to the eye in their medico-legal aspect. The book seems to cover the subject fully and may, with confidence, be referred to when the occasion arises.

DISEASES OF THE EYE. By EDWARD NETTLESHIP, F.R.C.S. Revised and edited by WM. CAMPBELL POSEY, A.B., M.D. Sixth American from the Sixth English Edition. With a supplement on Examinations for Color-Blindness and Acuity of Vision and Hearing by WM. THOMSON, M.D. With 5 colored plates and 192 engravings. 1900. [Lea Brothers & Co., Publishers, Philadelphia and New York.]

This well-known and excellent text-book has surely proved its usefulness by having reached the sixth edition. As each of the previous ones, this new edition has been brought up to date, and the American editor has incorporated in it all points of view in which we may differ from the English conception.

The book needs no further recommendation. ALT.

PAMPHLETS RECEIVED.

"A Case of Cyclops," by F. B. Walker, M.D.

"The Submerged Tonsil," by E. Pynchon, M.D.

"Detachment of the Retina," by J. L. Barnes, M.D.

"Report of the Ophthalmic Hospital," Cincinnati, O.

"Annual Report of St. Francis Hospital," Columbus, O.

"Balneotherapy in Eye Diseases," by Dr. M. Ohlemann.

"Ocular Complications of Variola," by G. F. Keiper, M.D.

"Sur les tumeurs de la glande lacrymale," by Dr. Rogman.

"The Crisis in Binocular Vision," by J. L. Barnes, M.D.

"The Significance of Earache in Children," by T. H. Halsted, M.D.

"The Technique of Tympanic Inflation," by E. Pynchon, M.D.

"The Stacke Operation in Chronic Otorrhœa," by E. B. Dench, M.D.

"In Memoriam: Dr. Henry Hodgen Mudd," by E. S. Smith, M.D.

"The Use of Argentamine in Conjunctival Diseases," by Jos. Imre, M.D.

"Otitis Media, Diagnosis and Treatment," by M. A. Goldstein, M.D.

"The Action of Euphthalmin on the Eye," by J. Woskressinsky, M.D.

"A Case of Sympathetic Neuro-Retinitis; Recovery," by J. T. Worrell, M.D.

"The Ocular Complications of Typhoid Fever." by G. E. de Schweinitz, M.D.

"The Relations of Ophthalmology to General Medicine," by C. G. Lewis, M.D.

"Thirty-first Annual Report of the Brooklyn Eye and Ear Hospital," 1900.

"Preliminary Report on the Eye of the Mole," by James Rollin Slonaker.

"Educational and Legislative Control of Tuberculosis," By Ch. Dennison, M.D.

"A Case of Ophthalmia Nodosa (Raupenhaar-Ophthalmie)," by Dr. Bayer, M.D.

"The Results of Panas Operation for Strabismus," by D. B. St. John Roosa, M.D.

"Dry Air in the Treatment of Suppuration of the Middle Ear," by J. A. Andrews, M.D.

"A Case of Plexiform Neuroma of the Eyelid (Rankenneurom)," by H. Friedenwald, M.D.

"The Surgical Treatment of High Myopia, with Report of a Case," by Ch. W. Kollock, M.D.

"How Far Has Specialism Benefited the Ordinary Practice of Medicine?" by L. D. Bulkley, M.D.

"On Mydriatics With Short Duration of Effect, Especially Euphthalmin," by P. Schneider, M.D.

"The Tenth Annual Report of the Eye, Ear, Nose and Throat Hospital, New Orleans, La.," 1899.

"On Injection of a Weak Solution of Sodium Chloride Into Collapsed Eyes," by J. A. Andrews, M.D.

"Fibers from the Lamina Cribrosa Extending Out from the Optic Disc Over the Retina," by F. C. Ford, M.D.

"Contributions to the Pathological Anatomy of Hæmorrhagic Affections of the Retina," by G. Ischreyt, M.D.

"Twenty-second Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital of Baltimore," 1900.

"Blindness from Sympathetic Ophthalmitis; Restoration of Vision by Critchett's Operation," by G. E. de Schweinitz, M.D.

"The Importance of a Careful Functional Examination in Chronic Inflammation of the Middle Ear," by E. B. Dench, M.D.

"The Value of Electrolytic Dilatation of the Eustachian Tube in Chronic Tubal Catarrh and Chronic Catarrhal Otitis Media," by R. B. Duel, M.D.

"Certain Changes in the Vessels and Vascular Coats of the Eye which are of Diagnostic and Prognostic Value in General Disease," by G. E. de Schweinitz, M.D.

"Clinical and Histological Study of a Melanotic Sarcoma of the Choroid, With Recurrence of the growth in the Orbit Five Months after Enucleation of the Eyeball, and One Extra-Scleral Mass," by G. E. deSchweinitz, M.D., and J. D. Steele, M.D.